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Divisions within the snake genera *Cylindrophis* Wagler, 1828 (Cylindrophiidae Fitzinger, 1843) and *Anomochilus* Berg, 1901 (Anomochilidae Cundall, Wallach and Rossman, 1993).

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ABSTRACT

This paper revisits the southern Asian fossorial snake genera *Cylindrophis* Wagler, 1828 (Cylindrophiidae Fitzinger, 1843) and *Anomochilus* Berg, 1901 (Anomochilidae Cundall, Wallach and Rossman, 1993) and their current taxonomy.

In the case of *Cylindrophis*, one new genus and two new subgenera are erected.

A new species is also described.

For *Anomochilus* a subgenus is erected and a new species described.

Both newly described species have been known as valid taxa within the literature for some time and are formally described herein to comply with the Zoological Code (Ride *et al.* 1999).

Keywords: Taxonomy; *Cylindrophis*; *Anomochilus*; new; genus; *Manserpens*; *Ernieswileus*; subgenus; *Macgoldrichea*; *Motteramus*; species; *wilsoni*; *marleneswileae*.

INTRODUCTION

Not since the major revision by McDowell (1975) of east Indonesian *Cylindrophis* Wagler, 1828 (Cylindrophiidae Fitzinger, 1843) has anyone looked at the taxonomy of the genus.

While most recognized species were formally named more than a century ago, it is likely that there remain a number of unnamed forms bearing in mind the secretive nature of the snakes and the relative lack of specimens collected to date.

The genus as currently recognized has always been monotypic for the family and contains just ten currently recognized and named species.

Besides two species formally described in the 1990's, none have been named since 1920.

McDowell (1975) referred to a population on Baber Islands, Indonesia of indeterminate character, also referred to by others as being an undescribed species

Smith and Sidik (1998) wrote: "Iskandar also suggests that the species on Babar Island, previously assigned to C. *boulengeri* is an undescribed species."

However as of 2013 no one has formally named this taxon.

As a result this is done herein according to the Zoological Code (Ride *et al.* 1999).

At the level between the family and species, no one it seems has bothered to revisit the Cylindrophiidae, with the placement of all species within a single genus being accepted without question.

Notwithstanding this, the eleven known species do conform to four well-defined species groups worthy of taxonomic recognition.

Two are herein accorded subgenus status, while the third monotypic group is elevated to a new genus.

As a result both Cylindrophiidae and the component genera are formally redefined herein.

Key references in terms of the Cylindrophiidae and the relevant taxonomy include, Adler *et al.* (1992), Ahl (1933), Auliya (2006), Bachman (1985), Bergman (1953), Bezuijen (2009), Blanford (1881), Botejue *et al.* (2012), Boulenger (1896, 1897, 1920), Cox *et al.* (1998), Brongersma (1933), Das and De Silva (2005), Das and Yaakob (2007), David and Vogel (1996, de Lang and Vogel (2005), de Rooij (1917), De Silva (1998), Dowling and Jenner (1988), Duméril and Bibron (1844), Frith and Frith (1978), Geissler *et al.* (2001), Gray (1849), Grossmann and Tillack (2001), Hakim (2012), Inger and Voris (2001), Jan (1865), Janzen *et al.* (2007), Karns *et al.* (2005), Laurenti (1768), Linnaeus (1758), Malkmus *et al.* (2002), Manthey and Grossmann (1997), McDiarmid *et al.* (1999), McDowell (1975), Mertens (1930), Meyer (1887), Müller (1985), Pauwels *et al.* (2000, 2003), Pyron *et al.* (2011, 2013), Roux (1911), Sang *et al.* (2009), Schlegel (1839), Seong Hoon (2012), Smedley (1931), Smith (1927, 1943), Smith and Sidik (1998), Stuebing (1991, 1994), Stuebing and Goh (1993), Stuebing and Inger (1999), Taylor (1965), Underwood (2002), Voris (2006), Wagler (1830), Wall (1921), Wanger *et al.* (2011), Winchell (2003a, 2003b), Zhao and Adler (1993), Zug *et al.* (1998) and sources cited therein.

The taxonomy of the the genus *Anomochilus* Berg, 1901 has in some ways had a similar history to that of the Cylindrophiidae Fitzinger, 1843, notwithstanding the name change for the genus after it was found *Anomalochilus* was pre-occupied.

The genus *Anomalochilus* was first established by van Lidth de Jeude (1890) for *Anomalochilus*

weberi van Lidth de Jeude, 1890 (type locality:"Sumatra: Kaju tanam" [5 Kajutanam, Sumatera

Province, western Indonesia]).

However Berg (1901) showed that the generic name is preoccupied by *Anomalochilus* Blanchard, 1850: Coleoptera (Williams and Wallach, 1989), and provided the replacement name, *Anomochilus*. McDowell (1975) placed the genus under Cylindrophiidae, but more recently, it was allocated to the Anomochilidae (Cundall *et al.*, 1993), with molecular data showing its relationships with some but not other members of the Cylindrophiidae, rendering the latter possibly paraphyletic (Gower *et al.* 2005, Das *et al.* 2008).

Two further species have been described (Das *et al.* 2008) and yet no one has bothered to look at whether the three species put within the genus as currently recognized are appropriately placed.

That the snake described by Das *et al.* was a member of the family Anomochilidae is not in dispute. However a re-evaluation of the species itself described as *Anomochilus monticola* Das, Lakim, Lim and Hui, 2008 shows that it is quite divergent from the other two described members of the genus both in form and habit.

Therefore it should be placed in a new genus.

This is defined herein according to the Zoological Code (Ride *et al.* 1999).

The species *Anomalochilus leonardi* Smith, 1940 was described from a specimen from Sumatra, Indonesia. It remains known from just two specimens.

More recently a third specimen attributed to this species was found on the island of Borneo.

However a revisiting of the specimen shows that it is in fact of a different species level taxon McDiarmid *et al.* (1999).

It is therefore described below according to the Zoological Code (Ride *et al.* 1999).

While the literature on the genus *Anomochilus* treated generally as one and the same as the Anomochilidae by most authors is relatively sparse, the key references in terms of taxonomy include, Berg (1901), Boulenger (1893), Brongersma and Helle (1951), Cundall *et al.* (1993), Das and Yaakob (2007), Das *et al.* (2008) de Rooij (1917), Gower *et al.* (2005), de Juede and Van (1890), Malkmus *et al.* (2002), Manthey and Grossmann (1997), McDiarmid *et al.* (1999), McDowell (1975), Smith (1940), Stuebing and Goh (1993), Tweedie (1983), Williams and Wallach (1989), Yaakob (2003) and sources cited therein.

FAMILY CYLINDROPHIIDAE

(Terminal taxon: *Cylindrophis resplendens* Wagler, 1828).

Widely known as of 2013 as *Cylindrophis ruffus* (Laurenti, 1768).

Diagnosis: The diagnosis for the family has until now been the same as for the genus *Cylindrophis*, as the family has been treated as monotypic for the genus.

This is now not the case.

Notwithstanding this, the family diagnosis remains unchanged.

The family Cylindrophiidae is herein defined as snakes with the following suite of characters: small head not distinct from neck, covered with large symmetrical shields; the nostril in a single nasal, which forms a suture with its fellow behind the rostral, with no loreal or preocular scale; a small postocular, a mental groove present; tail short and blunt (De Rooij, 1917).

Teeth are moderate and subequal, with 9-13 in each maxillary and none in the premaxillary. Eyes are small with round or vertically subelliptical pupil that is distinct from the neighbouring shields.

Body is cylindrical with smooth scales in 17-23 rows, depending on the species. Tail is short and blunt.

In the most speciose genus *Cylindrophis* **(**10 recognized species) the ventrals are feebly enlarged, excluding the species *wilsoni sp. nov.* which has ventrals the same size as the adjoining lateral scales. In the other genus *Manserpens gen. nov.* (this paper) (one species only), this is not the case.

Manserpens is separated from *wilsoni sp. nov.* by having 17 mid body rows (unique to this genus).

It is also separated by colour pattern and distribution (as outlined in the descriptions of each species and genus below).

Superficially similar-looking species in the family Anomochilidae, Cundall, Wallach and Rossman, 1993 are separated most easily by the absence of a mental groove.

Distribution: Southern Asia, including outer islands of the Asian Plate, as far east as Tanimbar Islands (Yamdena Island).

Content: *Cylindrophis* Wagler, 1828; *Manserpens gen. nov.* (this paper).

GENUS *CYLINDROPHIS* WAGLER, 1828

Type species: *Cylindrophis resplendens* Wagler, 1828.

Generally known as *Cylindrophis ruffus* (Laurenti, 1768).

Diagnosis: The genus *Cylindrophis* is defined by the following suite of characters: small head not distinct from neck, covered with large symmetrical shields; the nostril in a single nasal, which forms a suture with its fellow behind the rostral, with no loreal or preocular scale; a small postocular, a mental groove present; tail short and blunt (De Rooij, 1917).

Teeth are moderate and subequal, with 9-13 in each maxillary and none in the premaxillary. Eyes are small with round or vertically subelliptical pupil that is distinct from the neighbouring shields.

Body is cylindrical with smooth scales in 19-23 rows, depending on the species. Tail is short and blunt.

In the most speciose genus *Cylindrophis* **(**10 recognized species) the ventrals are feebly enlarged, excluding the species *wilsoni sp. nov.* which has ventrals the same size as the adjoining lateral scales. In the other genus *Manserpens gen. nov.* (this paper) (one species only), this is not the case.

Manserpens is separated from *wilsoni sp. nov.* by having 17 mid body rows (unique to this genus).

It is also separated by colour pattern and distribution (as outlined in the descriptions of each species and genus below).

Superficially similar-looking species in the family Anomochilidae, Cundall, Wallach and Rossman, 1993 are separated most easily by the absence of a mental groove.

The genus *Manserpens gen. nov.* (monotypic for the species originally described as *Cylindrophis engkariensis* Steubing, 1994) is differentiated from all species within *Cylindrophis* in the number of mid-body scale rows, being 17 versus 19-23 in the *Cylindrophis.*

Furthermore, unlike species of *Cylindrophis,* the ventrals of *Manserpens gen. nov.* are indistinguishable in width from the dorsals.

Manserpens gen. nov. also possesses a unique colour pattern of small, white, irregularly shaped paravertebral spots, and the tail dark (black) dorsally, and lighter ventrally with dark mottling. In contrast, *Cylindrophis rufus* is characterised by orange bands partially encircling a black body; an incomplete orange ring encircling the posterior portion of the head, and a broad orange band encircling the tail.

Equally contrasting with the pattern of *M. engkariensis* is *Cylindrophis lineatus,* which has (in alcohol) a yellowish head with a faint dark rostral spot, alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

The subgenera *Macgoldrichea subgen. nov.* and *Motteramus subgen. nov* within *Cylindrophis* are separated from the nominate subgenus by the fact that the diameter of the eye is one third to one fourth its distance from the nostril, versus about half its distance from the nostril in *Cylindrophis.*

Macgoldrichea gen. nov. and *Motteramus subgen. nov* are further separated from *Cylindrophis* by having the interocular width equal to the length of the snout, versus the interocular width being more the length of the snout in *Cylindrophis.*

The subgenus *Macgoldrichea subgen. nov.* is separated from subgenus *Cylindrophis* and *Motteramus subgen. nov.* by having the frontal being smaller than the supraocular or parietal, versus being as large as or larger than the supraocular and larger than the parietals in both other subgenera.

Macgoldrichea subgen. nov. is further separated from all other Cylindrophiidae by the following suite of characters: Diameter of the eye is one third to one fourth its distance from the nostril; the distance between the eyes equals the length of the snout; frontal usually a little smaller than the supraocular or the parietal; six upper labials; third and fourth entering the eye; 19-21 mid-body rows; ventrals are not twice as large as the contiguous scales; 189-212 ventrals; anal divided, 4-6 subcaudals; colour above is with a black network enclosing two series of large reddish-brown spots along the back; lower parts white and variegated with black.

The subgenus *Motteramus subgen. nov.* is separated from the nominate subgenus and *Macgoldrichea subgen. nov.* by color pattern. Unlike the others, *Motteramus subgen. nov.* either:

lacks a pale collar, has no pale transverse bars on the dorsum, although sometimes with light brown longitudinal bands, has a pale head with dark spotting, sometimes with the entire crown behind the tip of the muzzle dark as well and has a dark anal region, or:

has a pattern of alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

The subgenus *Cylindrophis* is separated from the *Motteramus subgen. nov.* by hemipenal morphology. In *Cylindrophis* the sulcus extends posteriorly (as seen by dissection of the inverted organ) straight to the tip of the organ, with the prominent folds that form the lips of the sulcus tapered and gradually diminishing distally. By contrast in *Motteramus subgen. nov.* the sulcus runs distad as a deep groove to the end short of the tip of the organ, then to be continued by a shallower depression extending diagonally across the tip of the organ (perhaps forming a terminal cup when the organ is everted); the lips of the sulcus become enlarged distally and form very large frills bordering on the terminal depression.

Content: *Cylindrophis* (*Cylindrophis*) *ruffus* (Laurenti, 1768) (type species); *C.* (*Cylindrophis*) *aruensis* Boulenger, 1920; *C.* (*Cylindrophis*) *boulengeri* Roux, 1911; *C.* (*Cylindrophis*) *yamdena* Smith and Sidik, 1998; *Cylindrophis* (*Macgoldrichea*) *maculatus* (Linnaeus, 1754); *C.* (*Motteramus*) *melanotus* (Wagler, 1830); *C.* (*Motteramus*) *isolepis* (Boulenger, 1896); *C.* (*Motteramus*) *opisthorhodus* (Boulenger, 1897); *C.* (*Motteramus*) *lineatus* (Blanford, 1881); *C.* (*Motteramus*) *wilsoni sp. nov.* (this paper).

NEW SUBGENUS *MACGOLDRICHEA SUBGEN. NOV.*

Type species: *Anguis maculata* Linnaeus, 1754.

Currently known by most authors as *Cylindrophis maculatus* (Linnaeus, 1754).

Diagnosis: The subgenera *Macgoldrichea subgen. nov.* and *Motteramus subgen. nov* within *Cylindrophis* are separated from the nominate subgenus by the fact that the diameter of the eye is one third to one fourth its distance from the nostril, versus about half its distance from the nostril in *Cylindrophis.*

Macgoldrichea gen. nov. and *Motteramus subgen. nov* are further separated from *Cylindrophis* by having the interocular width equal to the length of the snout, versus the interocular width being more the length of the snout in *Cylindrophis.*

The subgenus *Macgoldrichea subgen. nov.* is separated from subgenus *Cylindrophis* and *Motteramus subgen. nov.* by having the frontal being smaller than the supraocular or parietal, versus being as large as or larger than the supraocular and larger than the parietals in both other subgenera.

Macgoldrichea subgen. nov. is further separated from all other Cylindrophiidae by the following suite of characters: Diameter of the eye is one third to one fourth its distance from the nostril; the distance between the eyes equals the length of the snout; frontal usually a little smaller than the supraocular or the parietal; six upper labials; third and fourth entering the eye; 19-21 mid-body rows; ventrals are not twice as large as the contiguous scales; 189-212 ventrals; anal divided, 4-6 subcaudals; colour above is with a black network enclosing two series of large reddish-brown spots along the back; lower parts white and variegated with black.

The subgenus *Motteramus subgen. nov.* is separated from the nominate subgenus and *Macgoldrichea subgen. nov.* by color pattern. Unlike the others, *Motteramus subgen. nov.* either:

lacks a pale collar, has no pale transverse bars on the dorsum, although sometimes with light brown longitudinal bands, has a pale head with dark spotting, sometimes with the entire crown behind the tip of the muzzle dark as well and has a dark anal region, or:

has a pattern of alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

The subgenus *Cylindrophis* is separated from the *Motteramus subgen. nov.* by hemipenal morphology. In *Cylindrophis* the sulcus extends posteriorly (as seen by dissection of the inverted organ) straight to the tip of the organ, with the prominent folds that form the lips of the sulcus tapered and gradually diminishing distally. By contrast in *Motteramus subgen. nov.* the sulcus runs distad as a deep groove to the end short of the tip of the organ, then to be continued by a shallower depression extending diagonally across the tip of the organ (perhaps forming a terminal cup when the organ is everted); the lips of the sulcus become enlarged distally and form very large frills bordering on the terminal depression.

The genus *Cylindrophis* is defined by the following suite of characters: small head not distinct from neck, covered with large symmetrical shields; the nostril in a single nasal, which forms a suture with its fellow behind the rostral, with no loreal or preocular scale; a small postocular, a mental groove present; tail short and blunt (De Rooij, 1917).

Teeth are moderate and subequal, with 9-13 in each maxillary and none in the premaxillary. Eyes are small with round or vertically subelliptical pupil that is distinct from the neighbouring shields.

Body is cylindrical with smooth scales in 19-23 rows, depending on the species. Tail is short and blunt.

In the most speciose genus *Cylindrophis* **(**10 recognized species) the ventrals are feebly enlarged, excluding the species *wilsoni sp. nov.* which has ventrals the same size as the adjoining lateral scales. In the other genus *Manserpens gen. nov.* (this paper) (one species only), this is not the case.

Manserpens is separated from *wilsoni sp. nov.* by having 17 mid body rows (unique to this genus).

It is also separated by colour pattern and distribution (as outlined in the descriptions of each species and genus below).

Superficially similar-looking species in the family Anomochilidae, Cundall, Wallach and Rossman, 1993 are separated most easily by the absence of a mental groove.

The genus *Manserpens gen. nov.* (monotypic for the species originally described as *Cylindrophis engkariensis* Steubing, 1994) is differentiated from all species within *Cylindrophis* in the number of mid-body scale rows, being 17 versus 19-23 in the *Cylindrophis.*

Furthermore, unlike species of *Cylindrophis,* the ventrals of *Manserpens gen. nov.* are indistinguishable in width from the dorsals.

Manserpens gen. nov. also possesses a unique colour pattern of small, white, irregularly shaped paravertebral spots, and the tail dark (black) dorsally, and lighter ventrally with dark mottling. In contrast, *Cylindrophis rufus* is characterised by orange bands partially encircling a black body; an incomplete orange ring encircling the posterior portion of the head, and a broad orange band encircling the tail.

Equally contrasting with the pattern of *M. engkariensis* is *Cylindrophis lineatus,* which has (in alcohol) a yellowish head with a faint dark rostral spot, alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

Distribution: Sri Lanka, from sea level to about 1,200 metres.

Etymology: Named in honour of Louise McGoldrich of East Ringwood, Victoria, Australia, for services to conservation and wildlife education, including her excellent work with the Snakebusters reptile education company.

Content: *Cylindrophis* (*Macgoldrichea*) *maculatus* (Linnaeus, 1754) (type species).

NEW SUBGENUS *MOTTERAMUS SUBGEN. NOV.*

Type species: *Cylindrophe melanoto* Wagler, 1828.

Currently widely known as *Cylindrophis melanotus* Wagler, 1828.

Diagnosis: The subgenera *Macgoldrichea subgen. nov.* and *Motteramus subgen. nov* within *Cylindrophis* are separated from the nominate subgenus by the fact that the diameter of the eye is one third to one fourth its distance from the nostril, versus about half its distance from the nostril in *Cylindrophis.*

Macgoldrichea gen. nov. and *Motteramus subgen. nov* are further separated from *Cylindrophis* by having the interocular width equal to the length of the snout, versus the interocular width being more the length of the snout in *Cylindrophis.*

The subgenus *Macgoldrichea subgen. nov.* is separated from subgenus *Cylindrophis* and *Motteramus subgen. nov.* by having the frontal being smaller than the supraocular or parietal, versus being as large as or larger than the supraocular and larger than the parietals in both other subgenera.

Macgoldrichea subgen. nov. is further separated from all other Cylindrophiidae by the following suite of characters: Diameter of the eye is one third to one fourth its distance from the nostril; the distance between the eyes equals the length of the snout; frontal usually a little smaller than the supraocular or the parietal; six upper labials; third and fourth entering the eye; 19-21 mid-body rows; ventrals are not twice as large as the contiguous scales; 189-212 ventrals; anal divided, 4-6 subcaudals; colour above is with a black network enclosing two series of large reddish-brown spots along the back; lower parts white and variegated with black.

The subgenus *Motteramus subgen. nov.* is separated from the nominate subgenus and *Macgoldrichea subgen. nov.* by color pattern. Unlike the others, *Motteramus subgen. nov.* either:

lacks a pale collar, has no pale transverse bars on the dorsum, although sometimes with light brown longitudinal bands, has a pale head with dark spotting, sometimes with the entire crown behind the tip of the muzzle dark as well and has a dark anal region, or:

has a pattern of alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

The subgenus *Cylindrophis* is separated from the *Motteramus subgen. nov.* by hemipenal morphology. In *Cylindrophis* the sulcus extends posteriorly (as seen by dissection of the inverted organ) straight to the tip of the organ, with the prominent folds that form the lips of the sulcus tapered and gradually diminishing distally. By contrast in *Motteramus subgen. nov.* the sulcus runs distad as a deep groove to the end short of the tip of the organ, then to be continued by a shallower depression extending diagonally across the tip of the organ (perhaps forming a terminal cup when the organ is everted); the lips of the sulcus become enlarged distally and form very large frills bordering on the terminal depression.

The genus *Cylindrophis* is defined by the following suite of characters: small head not distinct from neck, covered with large symmetrical shields; the nostril in a single nasal, which forms a suture with its fellow behind the rostral, with no loreal or preocular scale; a small postocular, a mental groove present; tail short and blunt (De Rooij, 1917).

Teeth are moderate and subequal, with 9-13 in each maxillary and none in the premaxillary. Eyes are small with round or vertically subelliptical pupil that is distinct from the neighbouring shields.

Body is cylindrical with smooth scales in 19-23 rows, depending on the species. Tail is short and blunt.

In the most speciose genus *Cylindrophis* **(**10 recognized species) the ventrals are feebly enlarged, excluding the species *wilsoni sp. nov.* which has ventrals the same size as the adjoining lateral scales. In the other genus *Manserpens gen. nov.* (this paper) (one species only), this is not the case.

Manserpens is separated from *wilsoni sp. nov.* by having 17 mid body rows (unique to this genus).

It is also separated by colour pattern and distribution (as outlined in the descriptions of each species and genus below).

Superficially similar-looking species in the family Anomochilidae, Cundall, Wallach and Rossman, 1993 are separated most easily by the absence of a mental groove.

The genus *Manserpens gen. nov.* (monotypic for the species originally described as *Cylindrophis engkariensis* Steubing, 1994) is differentiated from all species within *Cylindrophis* in the number of mid-body scale rows, being 17 versus 19-23 in the *Cylindrophis.*

Furthermore, unlike species of *Cylindrophis,* the ventrals of *Manserpens gen. nov.*

are indistinguishable in width from the dorsals.

Manserpens gen. nov. also possesses a unique colour pattern of small, white, irregularly shaped paravertebral spots, and the tail dark (black) dorsally, and lighter ventrally with dark mottling. In contrast, *Cylindrophis rufus* is characterised by orange bands partially encircling a black body; an incomplete orange ring encircling the posterior portion of the head, and a broad orange band encircling the tail.

Equally contrasting with the pattern of *M. engkariensis* is *Cylindrophis lineatus,* which has (in alcohol) a yellowish head with a faint dark rostral spot, alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

Distribution: Indonesian region.

Content: *Cylindrophis* (*Motteramus*) *melanotus* (Wagler, 1830) (type species); *C.* (*Motteramus*) *isolepis* (Boulenger, 1896); *C.* (*Motteramus*) *opisthorhodus* (Boulenger, 1897); *C.* (*Motteramus*) *lineatus* (Blanford, 1881); *C.* (*Motteramus*) *wilsoni sp. nov.* (this paper).

NEW SPECIES *CYLINDROPHIS* (*MOTTERAMUS*) *WILSONI SP. NOV.*

Holotype: A specimen collected from the Babber Islands (Pulau Babar), originally held at the Rijks Museum van Natuurlijke Historie, Leiden, specimen number: 5542, since transferred to Naturalis Biodiversity Center, Holland.

This is a government controlled facility that allows researchers access to its collection.

Holotype description: Scales in 21:19:19 rows, 187 ventrals (including gulars) and ventrals of the same size as the adjacent scale rows; 7 subcaudals and a terminal scute. The frontal is just as long as broad. The diameter of the eye equals one fourth

of its distance from the nostril. 12 left maxillary teeth, 9 left palatine teeth, 10 left pterygoid teeth, 14 left dentary teeth. The yellow spots on the nape are nearly confluent. Vertical yellow spots on body; pale prefrontal spots; anterior subcaudals yellow, posterior ones black.

Diagnosis: Separated from all other *Cylindrophis* (including within all subgenera) and *Manserpens gen. nov.* by the following pair of characters: 19 midbody scale rows and ventrals of the same size as the adjacent scale rows.

The specimen was formerly diagnosed erroneously as *C. boulengeri*, from which it is readily separated by its colouration as described herein. The colouration of: yellow spots on the nape nearly confluent; Vertical yellow spots on body; pale prefrontal spots; anterior subcaudals yellow, posterior ones black, actually resembles *C. ruffus.*

Notwithstanding this, *C.* (*Motteramus*) *wilsoni sp. nov.* is separated from both *C. boulengeri* and *C. ruffus* by its far smaller eye (see subgenus diagnosis, as it applies to all in that subgenus). The species *C.* (*Motteramus*) *aruensis* is separated from *C.* (*Motteramus*) *wilsoni sp. nov.* by having 23 rather than 19 mid-body rows.

C. (*Motteramus*) *wilsoni sp. nov.* is separated from *C.* (*Motteramus*) *melanotus* and *C.* (*Motteramus*) *lineatus* by its lower ventral count 187, versus 224-245 in *C.* (*Motteramus*) *melanotus* and 210-215 in *C.* (*Motteramus*) *lineatus.*

C. (*Motteramus*) *wilsoni sp. nov.* is separated from *C.* (*Motteramus*) *opisthorhodus* by having 19 midbody rows as opposed to 23 in *C.* (*Motteramus*) *opisthorhodus.*

C. (*Motteramus*) *wilsoni sp. nov.* is separated from *C.* (*Motteramus*) *isolepis* by having 19 midbody rows as opposed to 21 midbody rows and 187 ventrals as opposed to 221 in *C.* (*Motteramus*) *isolepis.*

Distribution: Pulau Babar, Indonesia.

Etymology: The name is in honour of Rowville Wilson, of Burwood, Victoria, Australia, for his work in helping conserve Australian wildlife, including logistical support for the Snakebusters wildlife education enterprise.

NEW SUBGENUS *CYLINDROPHIS* WAGLER, 1828.

Type species: *Cylindrophis resplendens* Wagler, 1828.

Generally known as *Cylindrophis ruffus* (Laurenti, 1768).

Diagnosis: See as for genus (above) and then cross reference with diagnoses for the other subgenera.

Distribution: South-east Asia.

Content: *Cylindrophis* (*Cylindrophis*) *ruffus* (Laurenti, 1768) (type species); *C.* (*Cylindrophis*) *aruensis* Boulenger, 1920; *C.* (*Cylindrophis*) *boulengeri* Roux, 1911; *C.* (*Cylindrophis*) *yamdena* Smith and Sidik, 1998.

NEW GENUS *MANSERPENS GEN. NOV.*

Type species: *Cylindrophis engkariensis* Stuebing 1994

Diagnosis: The genus *Manserpens gen. nov.* (monotypic for the species originally described as *Cylindrophis engkariensis* Steubing, 1994) is differentiated from all species within *Cylindrophis* in the number of mid-body scale rows, being 17 versus 19-23 in the genus *Cylindrophis.*

Furthermore, unlike species of *Cylindrophis,* the ventrals of *Manserpens gen. nov.*

are indistinguishable in width from the dorsals.

Manserpens gen. nov. also possesses a unique colour pattern of small, white, irregularly shaped paravertebral spots, and the tail dark (black) dorsally, and lighter ventrally with dark mottling. In contrast, *Cylindrophis rufus* is characterised by orange bands partially encircling a black body; an incomplete orange ring encircling the posterior portion of the head, and a broad orange band encircling the tail.

Equally contrasting with the pattern of *M. engkariensis* is *Cylindrophis lineatus,* which has (in alcohol) a yellowish head with a faint dark rostral spot, alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

The subgenera *Macgoldrichea subgen. nov.* and *Motteramus subgen. nov* within *Cylindrophis* are separated from the nominate subgenus by the fact that the diameter of the eye is one third to one fourth its distance from the nostril, versus about half its distance from the nostril in *Cylindrophis.*

Macgoldrichea gen. nov. and *Motteramus subgen. nov* are further separated from *Cylindrophis* by having the interocular width equal to the length of the snout, versus the interocular width being more the length of the snout in *Cylindrophis.*

The subgenus *Macgoldrichea subgen. nov.* is separated from subgenus *Cylindrophis* and *Motteramus subgen. nov.* by having the frontal being smaller than the supraocular or parietal, versus being as large as or larger than the supraocular and larger than the parietals in both other subgenera.

Macgoldrichea subgen. nov. is further separated from all other Cylindrophiidae by the following suite of characters: Diameter of the eye is one third to one fourth its distance from the nostril; the distance between the eyes equals the length of the snout; frontal usually a little smaller than the supraocular or the parietal; six upper labials; third and fourth entering the eye; 19-21 mid-body rows; ventrals are not twice as large as the contiguous scales; 189-212 ventrals; anal divided, 4-6 subcaudals; colour above is with a black network enclosing two series of large reddish-brown spots along the back; lower parts white and variegated with black.

The subgenus *Motteramus subgen. nov.* is separated from the nominate subgenus and *Macgoldrichea subgen. nov.* by color pattern. Unlike the others, *Motteramus subgen. nov.* either:

lacks a pale collar, has no pale transverse bars on the dorsum, although sometimes with light brown longitudinal bands, has a pale head with dark spotting, sometimes with the entire crown behind the tip of the muzzle dark as well and has a dark anal region, or:

has a pattern of alternating dark and yellow bands along the sides, an irregular dark longitudinal stripe along the side, running the length of the body, two light paravertebral stripes and a middorsal dark stripe.

The subgenus *Cylindrophis* is separated from the *Motteramus subgen. nov.* by hemipenal morphology. In *Cylindrophis* the sulcus extends posteriorly (as seen by dissection of the inverted organ) straight to the tip of the organ, with the prominent folds that form the lips of the sulcus tapered and gradually diminishing distally. By contrast in *Motteramus subgen. nov.* the sulcus runs distad as a deep groove to the end short of the tip of the organ, then to be continued by a shallower depression extending diagonally across the tip of the organ (perhaps forming a terminal cup when the organ is everted); the lips of the sulcus become enlarged distally and form very large frills bordering on the terminal depression.

The genus *Cylindrophis* is defined by the following suite of characters: small head not distinct from neck, covered with large symmetrical shields; the nostril in a single nasal, which forms a suture with its fellow behind the rostral, with no loreal or preocular scale; a small postocular, a mental groove present; tail short and blunt (De Rooij, 1917).

Teeth are moderate and subequal, with 9-13 in each maxillary and none in the premaxillary. Eyes are small with round or vertically subelliptical pupil that is distinct from the neighbouring shields.

Body is cylindrical with smooth scales in 19-23 rows, depending on the species. Tail is short and blunt.

In the most speciose genus *Cylindrophis* (10 recognized species) the ventrals are feebly enlarged. In the other genus *Manserpens gen. nov.* (this paper) (one species only), this is not the case.

Superficially similar-looking species in the family Anomochilidae,

Cundall, Wallach and Rossman, 1993 are separated most easily by the absence of a mental groove.

Distribution: Known only from Borneo.

Etymology: Named in honour of Daniel Man of Mitcham, Victoria, Australia, in recognition for his services to the Australian accounting industry and also wildlife conservation and education through his excellent back-office work with Snakebusters, reptile education and wildlife shows.

Content: *Manserpens engkariensis* (Stuebing, 1994) (type species).

FAMILY ANOMOCHILIDAE CUNDALL, WALLACH AND ROSSMAN, 1993

(Terminal taxon: *Anomalochilus weberi* de Jeude, 1890)

Diagnosis: Head small, indistinct from neck; forehead covered with large scales that may be either symmetrical or show an azygous parietofrontal; nostril in a single nasal, which is in contact with Supralabial 2; loreal and preocular absent; a single postocular; eye small; mental groove absent; body scales smooth; and tail short and conical (de Rooij, 1917; Tweedie, 1983; Manthey and Grossmann, 1997).

Distribution: Borneo and Sumatra.

Content: *Anomochilus* de Jeude, 1890; *Ernieswileus gen. nov.* (this paper).

GENUS *ANOMOCHILUS* LIDTH DE JEUDE, 1890

Type species: *Anomalochilus weberi* de Jeude, 1890

Diagnosis: For this genus, the diagnosis is as for the family: Head small, indistinct from neck; forehead covered with large scales that may be either symmetrical or show an azygous parietofrontal; nostril in a single nasal, which is in contact with Supralabial 2; loreal and preocular absent; a single postocular; eye small; mental groove absent; body scales smooth; and tail short and conical (de Rooij, 1917; Tweedie, 1983; Manthey and Grossmann, 1997).

The genus *Ernieswileus gen. nov.* (this paper) formerly included within *Anomochilus* is separated from *Anomochilus* by the following suite of characters: parietofrontal single, midbody scale rows 19, and no large pale spots on either side of vertebral. The new genus additionally differs from *A. weberi* (from Sumatra and southern Borneo) in showing an azygous (vs. paired) parietofrontal; 258-261 (vs. 242–248) ventrals; absence (vs. presence) of a light line along flanks; and absence (vs. presence) of large pale blotches on either side of the vertebral; and from *A. leonardi* (from Peninsular Malaysia and lowlands of eastern Borneo), in showing 19 (vs. 17) midbody scale rows; 258-261 (vs. 239-248) ventrals; and dorsum unpatterned dark brown, except for pale speckles, one scale wide, at intervals on either side of the vertebral region (vs. with large pale spots).

Distribution: Borneo and Sumatra.

Content: *Anomochilus weberi* de Jeude, 1890; *A. leonardi* Smith, 1940; *A. marleneswileae sp. nov.* (this paper).

NEW SPECIES *ANOMOCHILUS MARLENESWILEAE SP. NOV.*

Holotype: A specimen in the Sabah Museum Borneo, Malaysia, specimen number NH 2473, collected in 1981 by Raymond Goh, under a grassy herbaceous layer at the edge of a forest at 20 metres altitude, in the Sepilok Forest Reserve, Sandakan District, Sabah, Borneo.

The Sabah Museum Borneo, Malaysia is a government run facility that allows researchers access to their collection.

Diagnosis: This species *A. marleneswileae sp. nov.* was confused with the similar species *Anomochilus weberi* de Jeude, 1890 and *A. leonardi* Smith, 1940, with which it shares common properties (Stuebing and Goh 1993).

It is separated from these two species and the species described as *Anomalochilus monticola* Das, Lakim, Lim and Hui, 2008, herein assigned to a new genus (*Ernieswileus*) most readily by the following unique suite of characters: Eye minute, lateral is about four times its diameter distant from the nostril, three times its diameter from the mouth, partially covered by the preocular scale. Four supralabials, first smallest, third tallest and forming the ventral border of the orbit, fourth the longest and low. The rostral is long, more than twice as long as broad, extending onto upper surface of snout. Frontal large, rear border semicircular. Nasal scale large, reaching dorsal surface of the head and touching the prefrontal. No separate loreal. A large praeocular scale directly behind the nasal, in broad contact dorsally with prefrontal and frontal. A large supraocular, two thirds size of frontal. One postocular, larger than eye, much smaller than supraocular. A large temporal scale forming entire dorsal border of fourth supralabial, directly behind and larger than postocular. A second large temporal scale, above and behind the first one, directly posterior to the supraocular. A pair of slightly larger parietals behind frontal, each parietal smaller than supraocular. Five infralabials. Mental half size of first infralabial, one pair of chin shields larger than infralabials. Dorsal scales are smooth and very glossy, producing diffraction colors, weakly imbricate posteriorly. Ventrals not distinguishable from the lateral scales; 252 midventrals to vent. Divided anal, 7 subcaudals. Scale rows (excluding the midventral one) 17-19-17; last six vertebral scales are enlarged. The colour (in alcohol) is purplish brown with conspicuous circular or oval light spots, with fourteen pairs; each spot covering three scales, and approximately 35 abdominal pairs (each spot covering four scales), the latter alternating in left-right positions along the body axis. The dorsal side of the snout has a v-shaped transverse cream-coloured band immediately posterior to the rostral scale. The tail has a dark tip which is less than 10 per cent of the tail area, the rest of the tail encircled by a broad light-coloured band.

A. leonardi Smith, 1940 is separated from this new taxon *A. marleneswileae sp. nov.* by its lower ventral count (under 248, versus 252), just 17 midbody rows (excluding the mid-ventral line) (17:17:17, versus 17:17:19) and a fourth supralabial that is not noticeably longer and of similar size to the third.
The species *A. weberi* de Jeude, 1890 is separated from this new taxon *A. marleneswileae sp. nov.* by its lower ventral count (under 248, versus 252), a 17:19:19 scale row configuration, (versus 17:19:17), and the fact that the third and fourth supralabials may be of similar height (but the supralabials in specimens from Peninsula Malaysia and Sabah may be the same as in this species). *A. weberi* is further differentiated from *A. leonardi* and *A. marleneswileae sp. nov.* by colour pattern in having no complete light bands encircling the snout and tail, having fewer and smaller spots, and possessing a faint line along the flanks.

The species described as *Anomalochilus monticola* Das, Lakim, Lim and Hui, 2008, herein assigned to a new genus (*Ernieswileus*) can be separated from *A. marleneswileae sp. nov.* by the following suite of characters: parietofrontal single, midbody scale rows 19, and no large pale spots on either side of vertebral.

The new genus additionally differs from *A. weberi* (from Sumatra and southern Borneo) in showing an azygous (vs. paired) parietofrontal; 258-261 (vs. 242–248) ventrals; absence (vs. presence) of a light line along flanks; and absence (vs. presence) of large pale blotches on either side of the vertebral; and from *A. leonardi* (from Peninsular Malaysia and lowlands of eastern Borneo), in showing 19 (vs. 17) midbody scale rows; 258-261 (vs. 239-248) ventrals; and dorsum unpatterned dark brown, except for pale speckles, one scale wide, at intervals on either side of the vertebral region (vs. with large pale spots).

Distribution: Known only from the holotype and therefore currently only known from the Sepilok Forest Reserve, Sandakan District, Sabah, Borneo.

Etymology: Named in honour of Marlene Swile of Mitchell's Plain, Cape Town South Africa, in recognition of her contributions to African herpetology and the book publishing industry.

NEW GENUS *ERNIESWILEUS GEN. NOV.*

Type species: *Anomalochilus monticola* Das, Lakim, Lim and Hui, 2008.

Diagnosis: The genus *Ernieswileus gen. nov.* (this paper) formerly included within *Anomochilus* is separated from *Anomochilus* by the following suite of characters: parietofrontal single, midbody scale rows 19, and no large pale spots on either side of vertebral. The new genus additionally differs from *A. weberi* (from Sumatra and southern Borneo) in showing an azygous (vs. paired) parietofrontal; 258-261 (vs. 242–248) ventrals; absence (vs. presence) of a light line along flanks; and absence (vs. presence) of large pale blotches on either side of the vertebral; and from *A. leonardi* (from Peninsular Malaysia and lowlands of eastern Borneo), in showing 19 (vs. 17) midbody scale rows; 258-261 (vs. 239-248) ventrals; and dorsum unpatterned dark brown, except for pale speckles, one scale wide, at intervals on either side of the vertebral region (vs. with large pale spots).

Traits common to both the genus *Ernieswileus gen. nov.* and *Anomochilus* are the following: Head small, indistinct from neck; forehead covered with large scales that may be either symmetrical or show an azygous parietofrontal; nostril in a single nasal, which is in contact with Supralabial 2; loreal and preocular absent; a single postocular; eye small; mental groove absent; body scales smooth; and tail short and conical (de Rooij, 1917; Tweedie, 1983; Manthey and Grossmann, 1997).

Distribution: Borneo.

Etymology: Named in honor of Ernest (Ernie) Swile of Athlone, Capetown, South Africa in recognition to his contributions to African herpetology.

Content: *Ernieswileus monticola* (Das, Lakim, Lim and Hui, 2008).

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